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Why Performance Information Use Requires a Managerial Identity.

Evidence from the Field of Human Services

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Abstract

Previous research suggests that civil servants can perceive their role differently and that these differing perceptions also influence their responses to managerial reform programs. Yet there is little research examining how different role perceptions influence the application of performance measurement. Using survey data from 742 human service organizations in Switzerland, the present study addresses this gap by investigating how professional and managerial role identities affect managers' use of performance information. The results support the hypotheses that role identities indirectly influence the application of performance information through the effects on role conflict that may occur when managerial professionals measure the performance of their organizations. A lack of resources, stringent political control, and poor information quality are also found to be associated with role conflict and a limited use of performance information.

Introduction

Reform initiatives inspired by the New Public Management (NPM) movement and demands to invest in performance measurement have led to the emergence of new responsibilities for public and nonprofit sector executives. In order to demonstrate that public funding is spent efficiently and effectively, managers are encouraged - or forced, to track measurable targets, manage and control achievements by using performance information, and report the performance of the organization to public authorities (Bouckaert & Halligan, 2008). Against this background, several scholars have argued that NPM is an “identity project”, since public management reforms promote new work roles that require an alteration of priorities, values, and self-definitions (du Gay, 1996; Horton, 2006; Rondeaux, 2006). Much of the literature assumes that public sector reforms based on private management principles will replace or complement executives’ traditional orientations with business-like values and corresponding managerial identities (Bourgault & Van Dorpe, 2013; Emery & Giaque, 2014; Meyer, Egger-Peitler, Höllerer, & Hammerschmid, 2014). In this context, scholars have also highlighted the resulting tensions for those who try to balance the competing, and at times conflicting, orientations in the public sector (Poulsen, 2007; Tummers, Vermeeren, Steijn, & Bekkers, 2012; Van der Wal, De Graaf, & Lawton, 2011).

Despite the growing prevalence of performance measurement, an effective application of performance information remains a critical issue in many measurement systems (Ammons & Rivenbark, 2008; de Lancer Julnes & Holzer, 2001). Studying the use and non-use of performance data, previous research has identified a range of factors that foster or constrain the utilization of performance information for internal management (for a review see Kroll, 2015a). However, a relatively small number of studies to date have explored how performance information use is influenced by managers’ personal values, beliefs, and identities. Scholars have therefore called for further research on the impact of managers’

personal attributes and role identities on the utilization of performance information (Kroll, 2014, 2015a).

The present article takes this shortcoming in the literature as its starting point and aims to improve our understanding of how role identities matter for the use of performance information in at least two important respects. First, unlike previous research that focused on top public administrators in generic settings of public administration, we explore the role identities of leading professionals in specialized human service organizations. The executives in human service fields deserve more attention because the increasing demands for performance measurement signify a profound shift from professional ethics and standards for working directly with clients to a managed service provision with a stronger emphasis on organizational performance, requiring leading professionals to take on new managerial roles and responsibilities (Causer & Exworthy, 1999; Kirkpatrick, Ackroyd, & Walker, 2005). Against this backdrop, the current analysis contributes to the literature by examining how managerial professionals identify themselves with traditional and new role conceptions and whether their varying self-definitions affect the perception and application of performance measurement.

A second key contribution of this study is that we pay special attention to tensions during the application of performance measurement that may arise as a result of conflicting values and norms. This emphasis is important because scholars have suggested that the managerial logic inherent in performance measurement is at odds with professional values and standards (Flynn, 1999; van der Veen, 2013). There is, however, little empirical evidence showing whether, and with what consequences, executives with a professional background experience such inconsistent values and norms. This is why we introduce the concept of role conflict and link it to executives' role identities and reliance on performance data. The research question at the core of this study is how performance information use is affected by

professional and managerial role identities and whether these relationships are mediated by role conflicts experienced by professionals in charge of management functions.

The present article proceeds as follows. We begin by reviewing the existing literature regarding impact factors for performance information use and then refer to identity theory, in order to outline our hypotheses for the relationships between role identities, role conflict and performance information use. Next, as described in the methodological section of the article, we illustrate these linkages by using structural equation modeling with survey data from 742 human service organizations in Switzerland. The findings indicate that a managerial role identity is a crucial individual disposition that fosters performance information use in various ways. In contrast, a professional self-concept is found to hamper data usage, though less directly and to a much lesser extent than it is fostered by a managerial identity. The article concludes with a discussion of its contributions, limitations, and implications.

Theory and Hypotheses

Drivers of Performance Information Use

As large numbers of public and nonprofit organizations have undertaken substantial efforts in the development of measurement systems and performance indicators, a growing body of research has begun to focus on the actual use of the information generated. Addressing this topic, scholars have conceptualized performance information use in various ways (cf. Behn, 2003; Van Dooren, Bouckaert, & Halligan, 2010), but their main focus has been devoted to a purposeful use of performance data. This type of utilization refers to the application of systematic feedback information with the goal of improving public services through goal-based learning, better targeting of resources, and better-informed decisions (Kroll, 2015a; Moynihan, Pandey, & Wright, 2012). Since this is the actual objective of most performance measurement interventions, it is of crucial importance to understand the conditions conducive to performance information use.

A systematic review of potential impact factors on data use by Kroll (2015a) has shown that organizational variables such as measurement system maturity, leadership support, and organizational culture are the most frequently tested influences on the application of performance information. Stressing the importance of cultural influences, scholars have argued that an actor's ability to learn and develop further depends not only on an organization's analytical capacity but also on the degree to which the organizational culture promotes continuous improvement, appreciates additional feedback information, and accepts performance measurement routines as an appropriate organizational behavior (Moynihan, 2005; Taylor, 2011). Other studies have alluded to the importance of a supportive environment that helps an organization to obtain the necessary trust, autonomy, and resources for building or utilizing internal management capacity (Yang & Hsieh, 2007; Yang & Pandey, 2009).

Given that managers, as potential users of performance data, always have some degree of discretion, scholars have also emphasized the importance of individual manager-related characteristics. In particular, it has been noted that managers who have positive attitudes toward performance measurement and are convinced of its benefits in terms of improving management and services are more willing to take the extra effort associated with the consideration and use of performance information (Kroll, 2015a; Moynihan, Pandey, & Wright, 2012; Taylor, 2011). As regards the impact of managers' identities on data use, Hammerschmid and coauthors (2014) demonstrated that top officials with a managerial role identity make more internal use of performance information. Kroll (2014), on the contrary, failed to find any significant link between public administrators' identity and their reliance on data usage. In the light of these inconclusive results, our study helps to clarify whether and how identities affect the utilization of performance information.

Role Identities and their Evolvement in the Context of Reform

Over the last few years, public servant's identities and their evolvement in the context of managerial reform programs has attracted growing interest in public management research (Berg, 2006; Bourgault & Van Dorpe, 2013; de Graaf, 2011; Meyer et al., 2014; Rondeaux, 2006). Identities (or, more specifically, role identities) are defined as "self-conceptions, self-referent cognitions, or self-definitions that people apply to themselves as a consequence of the structural role positions they occupy" (Hogg, Terry, & White, 1995, p. 256). Since persons are typically embedded in multiple groups and role-relationships, identity theory asserts that persons have multiple identities which are ordered hierarchically, such that the identities at the top of the salience hierarchy are most likely to be activated (Stryker, 1968). The activation of an identity then leads to a cognitive process of self-verification in which the person behaves so as to maintain consistency with his or her role perception (Burke, 1991; Stets & Burke, 2000). Identity theory thus hypothesizes that the higher the salience of an identity relative to other identities, the higher the probability of behavioral choices in accord with the incorporated values and norms attached to that identity (Stryker & Burke, 2000).

Prior research seems to confirm the assumption that identities evolve as a result of management reforms. Bourgault and Van Dorpe (2013), for instance, find that role identities of top civil servants have changed from an emphasis on enforcing rules on guarding the public interest towards leading people through changes and ensuring an efficient use of resources. Notwithstanding this, they did not find the emergence of a pure managerial identity in the four European countries examined. Rather, the bureaucrat, policy advisor or professional identity persists in the civil service. These findings coincide with results from other studies that indicate a persistence of bureaucratic and professional identities alongside new managerial self-concepts in the civil service (de Graaf, 2011; Poulsen, 2007) or emphasize the emergence of hybrid identities that combine traditional and managerial principles (Berg, 2006; Meyer & Hammerschmid, 2006; Rondeaux, 2006). Consequently, there are now various different role concepts for civil servants to identify with.

Changing Roles, Identification Process, and Role Conflict

Although changing roles may have implications for the self-definitions of public administrators and professionals, new roles are unlikely to fully determine an individual's identity and behavior. Individuals always need to interpret a particular work role and identify themselves with the expectations that are attached to that role (Halford & Leonard, 1999). In the context of contemporary managerial reform programs, for instance, leading professionals will interpret their managerial role on the basis of their existing beliefs and self-concepts, and, by doing so, try to achieve correspondence between the associated role expectations and their self-definition (Poulsen, 2007; Stets & Burke, 2000). It is this process of identification which creates new managerial identities, but also leads to dilemmas and role conflict when new demands stand in opposition to an individuals' existing beliefs and identities.

According to the social psychological literature, role conflict occurs when a role incumbent feels that two or more expectations imposed on him or her are incompatible (Katz & Kahn, 1978). On this basis, Tummers et al. (2012) suggest that public professionals often experience a 'policy-professional role conflict' during policy implementation, namely when professionals perceive the role requirements demanded by the policy to be incongruent with professional values, norms, or behaviors. This is particularly the case when the policy has a strong focus on economic goals such as efficiency and financial transparency, or when the use of performance management systems and output controls are enforced (Tummers, Bekkers, & Steijn, 2009). As a result, professionals are often unwilling to implement such policies. Berg (2006) provides some further evidence that middle and lower level managers often share the concerns of front-line service professionals regarding public management reforms and react with resistance to these initiatives when they perceive managerial principles and tools as being incompatible with their professional identity (see also Kirkpatrick et al., 2005). When such incompatibilities or conflicts emerge during the implementation of performance

measurement, consequences can also be expected regarding the use of performance information. Managers' perception that data collection and consideration routines are at odds with their own values and beliefs may well raise skepticism as to the appropriateness of such practices and, consequently, increase their reluctance to invest extra time and effort into data usage.

Linking Identities and Role Conflict to Data Usage

Performance management interventions embody a set of expectations of how managerial professionals should behave (Moynihan & Hawes, 2012). Instead of focusing on professional procedures and standards, they are supposed to focus on results and rely on performance information when making decisions (Bouckaert & Halligan, 2008; Emery & Giauque, 2003). The way executives actually interpret this set of expected behaviors and live up to them, as explained above, takes place on the basis of the internalized beliefs and values that make up their self-concepts. On these grounds, we assume that role identities provide a fruitful approach to the exploration of how personal attributes of managers influence a purposeful use of performance information.

Performance measurement is one means of achieving a managerial logic that emphasizes businesslike values such as efficiency, innovativeness, risk-taking, responsiveness, and transparency (Horton, 2006; Kroll, 2014; Van der Wal et al., 2011). This closely fits the values and beliefs generally associated with a managerial identity. Hence, executives who see themselves mainly as managers are likely to consider performance measurement as an appropriate organizational routine, since the associated requirements are highly consistent with the values and beliefs that make up their self-concept. Given this compatibility, we assume that the higher the salience of a managerial role identity, the less likely is the experience of role conflict and the greater a person's willingness to invest some

extra effort for a purposeful use of performance information. This can be hypothesized as follows:

H1a: A higher level of a managerial role identity will have an indirect, positive effect on performance information use through its diminishing effect on role conflict.

Traditional role conceptions in many public and nonprofit organizations are related to professional standards for case treatment, code of ethics, principles of discretion and peer-control (Flynn, 1999; Freidson, 2001; Hupe & van der Krogt, 2013). A distinct professional identity linked to the specialized skills for the solution of human problems asserts a greater devotion to the public good rather than the economic efficiency of work (Freidson, 2001; Halford & Leonard, 1999). Given that many managers were formerly employed in professional roles or remain involved in professional practice, it can be assumed that they are familiar with professional principles of practice (Tummers et al., 2012).

Numerous studies show that professional orientations centering on the individual client, equal treatment, discretion, and equity are difficult to align with a managerial logic with a strong emphasis on organizational issues, standardization, control, and businesslike values such as efficiency (Berg, 2006; Emery & Giauque, 2003; Flynn, 1999; Tummers et al., 2009). When taking on managerial responsibilities, managerial professionals may thus be faced with multiple, potentially conflicting objectives, values and modes of occupational control. Based on this, we assume that executives who see themselves mainly as professionals are more likely to perceive an incompatibility between their internalized beliefs and the required practices for performance measurement, giving rise to the experience of role conflict. The occurrence of role conflict, in turn, is likely to decrease a person's willingness to invest extra time and effort in data usage because it reinforces doubts about the appropriateness of this behavior and leads to less positive attitudes toward performance measurement practices. We thus hypothesize:

H1b: A higher level of a professional role identity will have an indirect, negative effect on performance information use through its augmentative effect on role conflict.

Of course, performance information use is not just a matter of identity. For example, adequate resources in regards to time, personnel, and technical capacity have repeatedly been found to foster performance information use because they facilitate sustained data collection and analysis (de Lancer Julnes & Holzer, 2001; Moynihan & Landuyt, 2009). Moreover, it is reasonable to assume that the availability of resources to accomplish necessary managerial tasks can also influence managers' experience of role conflict. When a person's existing resources are insufficient to fulfill particular role expectations, he or she may experience an incongruence between demands and capacity, which leads to role conflict (Rizzo, House, & Lirtzman, 1970). On these grounds, we assume that resource adequacy facilitates a more pragmatic handling of measurement requirements, decreases potential role conflicts, and thereby leads to a higher level of performance information use. Since we are primarily interested in this indirect effect, we hypothesize:

H2a: The availability of resources for performance measurement will have an indirect, positive effect on performance information use through its diminishing effect on role conflict.

The degree of managerial authority – or the degree of political control as its restriction – represents another potential influence on performance information use. If managers have the capacity to make decisions and initiate change, they have greater incentive to identify and solve problems based on performance information (Moynihan & Pandey, 2010; Swiss, 2005). For this reason, performance interventions and the underlying idea of 'managerialism' call not only for a greater focus on results, but also pretend to increase managerial authority and scope for action (Ritz & Sager, 2010). Notwithstanding this, performance measurement has often

been introduced without providing managers any enhanced operational autonomy (Dull, 2009; Moynihan, 2006).

In practice, the devolution of authority and control is frequently challenged by a series of new formal rules, obligations, and contractual arrangements that tends to tighten control over public service delivery and to increase the influence of external political authority (van der Veen, 2013; Lægreid, Opedal, & Stigen, 2005), also referred to hereinafter as ‘political control’. This is likely to affect managers’ willingness to use performance information. If managers’ flexibility is restricted by many constraints of political control, as Swiss (2005) argues, they will be little inclined to use performance information for decision-making and improvement efforts. Furthermore, under conditions of stringent external oversight and scrutiny, managers may see performance measurement as a control arrangement and as a threat to professional discretion, rather than as a support for internal management (Ammons & Rivenbark, 2008). Since this is likely to exacerbate the perceived gap between measurement requirements and a manager’s own goals or self-concept, we assume that a higher level of political control is positively associated with the experience of role conflict which, in turn, hampers a purposeful use of performance information. This leads us to the last hypothesis:

H2b: Perceived political control will have an indirect, negative effect on performance information use through its augmentative effect on role conflict.

Data and Method

Sample

The research population consist of approximately 2.300 specialized human service organizations in the German- and French-speaking parts of Switzerland. It includes public and nonprofit facilities that represent five major areas of human services in Switzerland in which the legislative and regulatory authorities regard the application of management systems as a

central strategy for better management and improved service quality. The facilities included in this study are regulated and supervised mainly by the cantons, while services are usually provided by public authorities at the local level and by numerous nonprofit organizations. It should be mentioned here that the strong federal structure of Switzerland has resulted in a highly decentralized welfare system, in terms of control, financing and implementation (Bonoli & Champion, 2015). As a consequence of this, Switzerland does not have an accessible national database that includes all human service organizations. This is why this study includes only facilities with membership in a professional association, whose share is about 90 percent of the total population.

An online survey was sent to 2,047 executive directors during the summer of 2015 and achieved a 37.7 percent response rate ($n = 772$)¹. A total of 30 questionnaires were excluded from the analysis because the corresponding organizations did not collect any performance information at all. Among the remaining 742 human service organizations, nursing homes are most common (52%), followed by facilities for the disabled (22%). Work integration (10%) and children and youth institutions (9%) represent the third and fourth largest fields, while specialized facilities for drug addicts are the smallest group in the sample (7%). The proportion of public organizations is 24 percent, while the remainder is nonprofits relying to a large extent on public funding. More than half of the study participants (55%) are qualified social workers, social pedagogues, psychologists, or health professionals with an average 8 years of professional experience. Another 23 percent hold a degree in economics or received formal training in management, most of them (79%) with several years of work experience in the commercial sector. The remainder is distributed across numerous other occupations. Among all respondents, 70 percent were male, and the average age was 54 years. The median tenure in the current position fell between 7-9 years.

Study Measures

All study variables were measured using indices consisting of multiple survey items ranging from 1 (strongly disagree) to 7 (strongly agree), unless otherwise noted. Most questionnaire items were adapted from the existing literature and translated from the source language (English) into the target languages (German and French), following the procedure recommended by Brislin (1980). Appendix 1 contains more detailed information on variable measurement.

Performance information use is measured by an index of five items adopted from Moynihan, Pandey, and Wright (2012) and Kroll (2014). The index (Cronbach's $\alpha = 0.92$) captures managers' purposeful application of performance information for common purposes of data usage such as learning, decision-making, and control.

To measure the executive directors' role identities, two indices are constructed each based on four statements from the existing literature that reflect various requests, objectives and standards that respondents may associate with their role (cf. Bourgault & Van Dorpe, 2013; de Graaf, 2011). The *managerial role identity* scale ($\alpha = 0.80$) indicates the extent to which the respondents identify themselves with a set of objectives and principles that are typically associated with a managerial role conception. The *professional role identity* scale ($\alpha = 0.79$) reflects the traditional role perception in human service organizations and encompasses the extent to which the respondents regard professional principles as constitutive elements for their role. Factor analysis supports the two-factor solution, indicating that the identity types under consideration are two distinct forms of self-definition.²

Role conflict ($\alpha = 0.82$) is measured using four items from the policy-professional role conflict scale developed by Tummers et al. (2012). Tummers and colleagues conceptualized three types of role conflict on the policy level, and the corresponding scales have been used to measure the experience of role conflicts among mental healthcare professionals when implementing the reimbursement policy known as Diagnosis Related Groups (DRGs). One advantage of these scales is that all items can be rephrased to specify a particular policy being

examined. For practical reasons, we confine ourselves in this study to the policy-professional role conflict, which has been proved to be most influential in explaining public professional's willingness to implement (DRG) policies. The role conflict scale employed in this study captures the extent to which respondents perceive that performance measurement conflicts with their professional attitudes, values, and norms.

We include two additional variables that may influence performance information use as well as the experience of role conflict. First, we consider an index for measurement-related *resources*, such as time, money, personnel, and technical support capabilities for performance measurement. The index ($\alpha = 0.84$) is composed of three items adapted from de Lancer and Holzer (2001) and Dull (2009b). Second, we measure the intensity of *political control* with a three-item index ($\alpha = 0.74$) assessing the degree to which executive managers perceive the legal requirements and administrative regulation to constrain their organization's autonomy and independence, broadly following Lægreid et al. (2005).

In addition, we include goal clarity and information quality as control variables because both have repeatedly been found to be related to performance information use (cf. Kroll, 2015a). *Goal clarity* ($\alpha = 0.74$) is measured using a three-item scale developed by Rainey (1983). *Information quality* ($\alpha = 0.92$) is measured using five items from Kroll (2015b). The range consists of seven response categories from "very poor" to "excellent". To control for a possible sector effect, we include a dummy variable for an organization's *ownership* form (public vs. nonprofit). Lastly, *gender* and current *job tenure* are included to control for individual differences among respondents. Table 1 presents the descriptive statistics for each variable and the correlations.

[Table 1 here]

Analytical Procedure

In the present study, the challenge for the statistical analysis is to detect the indirect effects of four measures (managerial and professional role identity, resources, and political control) on performance information use via a mediating factor (role conflict). Structural equation modeling (SEM) was applied for this analysis as it provides an effective and direct way of testing hypothesized relationships among latent constructs, specifying and estimating mediated relationships, and for taking measurement errors into account (Bollen, 1989). The calculations were performed with the lavaan package in R.

A two-step approach was chosen for data analysis, following the recommendations of Anderson and Gerbing (1988). Prior to testing the hypotheses, we conducted confirmatory factor analyses (CFA) to assess the reliability of the study measures and test the hypothesized measurement model for all latent constructs. To test model fit, we used chi-squared statistics and multiple fit indices, as recommended by Hu and Bentler (1999). Because the inclusion of various types of organizations that differ in terms of ownership form, principal task, financing and control raises concerns as to whether the instrument possesses the same psychometric properties in all groups of organizations, this step also includes testing for measurement invariance across different areas of human services, as well as across the public and nonprofit sector.³ We assessed measurement invariance following the general sequence of imposing increasingly restrictive equality constraints across groups (Vandenberg & Lance, 2000). In the second step, we included the observed control variables as covariates and respecified the measurement model to test the hypothesized relationships using SEM.

Data screening was conducted before to assess multivariate normality, multicollinearity, and heteroscedasticity. There was no indication of multicollinearity or heteroscedasticity. Given that pre-analyses of the data revealed some deviation from multivariate normality, the maximum likelihood estimation (MLM) was combined with

‘robust’ standard errors and Satorra-Bentler scaled chi-square statistics for estimations and model evaluation (Satorra & Bentler, 2001). All reported path coefficients are standardized.

Analyses and Results

Measurement Model

For the hypothesized measurement model, in which all items were loaded on their expected latent construct, the model fit indices confirmed that the model fits the data well. The chi-square to degree of freedom ratio ($\chi^2/\text{df} = 760/398 = 1.91$) met the traditional rule-of-thumb criteria ($\chi^2/\text{df} < 2$). The root mean square error of approximation (RMSEA = 0.035) was lower than 0.06 and the root mean squared residual (SRMR = 0.048) was below 0.08. Both comparative fit index (CFI = 0.963) and Tucker Lewis index (TLI = 0.957) were above 0.95. Furthermore, all the factor loadings were significant at the $p < 0.001$ level and nontrivial in size (lambda values ranged from 0.57 to 0.92), providing support for the convergent validity of the indicators. The properties of the measurement model are summarized in appendix 2.

Measurement invariance was investigated by comparing the fit of various models that differ with respect to between-group constraints on factor loadings, item intercepts, factor variances and factor covariances. The properties of all models are summarized in appendix 3. Concerning the equivalence of the instrument across service domains, partial measurement invariance was established. Additional analyses to test for structural invariance revealed that constraining factor variances and covariances lead only to a negligible decrement in overall fit compared with the partial invariance model. Therefore, the assumption of an invariant range of scores on the latent factors and stable factor relationships across service domains is tenable. With regard to the equivalence of the instrument across sectors, the stepwise imposition of parameter constraints did not lead to any substantial decrease in model fit in any model. Scalar (strong) measurement invariance was thus established. The constraints on factor

variances and covariances are also tenable. Overall, the analyses support a high degree of measurement and structural invariance of the eight-factor model.

Structural Model

The theoretical model turned out to fit the data well: the χ^2/df ratio ($900/480 = 1.88$) was below 2; RMSEA (0.034) was below 0.06 and SRMR (0.047) below 0.08. TLI (0.952) and CFI (0.959) were also indicative of a good data fit, being higher than 0.95. The Lagrange multiplier test showed that no additional path could be added to improve model fit. The Wald test suggests that the direct paths linking goal clarity and role conflicts as well as professional role identity and performance information use could be removed without substantially decreasing model fit. The modified and final model exhibited an almost identical data fit ($\chi^2/\text{df} = 904/482 = 1.88$; RMSEA = 0.034; SRMR = 0.048; CFI = 0.958; TLI = 0.952). The model explained about 44 percent of the data variance for performance information use and 33 percent of the variance for the experience of role conflict. In addition, all coefficients for the hypothesized paths were significant at least at the $p < 0.05$ level and in the assumed direction. Standardized path coefficients, significance levels, and R-squares are reported in figure 1.

Consistent with hypothesis 1a, managerial role identity has a direct effect on role conflict and, through this relationship, an indirect positive effect on performance information use ($B = 0.133$, $z = 5.567$, $p < 0.01$), as shown in figure 1. It further transpired that the mediator role conflict accounts for about half of the association between managerial role identity and data usage, since there is also a significant direct relationship between this identity type and performance information use. Conversely, professional role identity has a direct effect on role conflict and, only through this relationship, an indirect negative effect on performance information use ($B = -0.040$, $z = -2.875$, $p < 0.01$). This supports hypothesis 1b.

Compared to the effects of a managerial identity, however, the direct and indirect effects of professional role identity are rather weak.

As expected in hypothesis 2a, the availability of resources for measurement is negatively associated with role conflict and has an indirect positive effect on performance information use via this mediator ($B = 0.061$, $z = 3.598$, $p < 0.01$). Hypothesis 2b is also supported as political control is positively associated with role conflict, and through this mediator, has an indirect negative effect on performance information use ($B = -0.058$, $z = -3.644$, $p < 0.01$). Since this negative effect is opposite in sign to the direct effect of political control on performance information use, also referred to as ‘inconsistent mediation’, role conflict acts like a suppressor variable in this case. Combined, these two effects result in a small and non-significant total effect. Yet mediation is present because role conflict explains part of the relationship.

Concerning control variables, information quality and job tenure are significantly associated with both role conflict and performance information use. When the quality of the available information increases, managers report less role conflict with performance measurement and higher scores on performance information use. The results further imply that more years in the current position tend to increase data use, but also have a positive relationship with the experience of role conflict. The other controls (ownership, gender, goal clarity) do not display any significant relationship with role conflict and data use.

[Figure 1 here]

Discussion

Since the extent to which measurement efforts prove to be successful greatly depends on the actual use of the data generated, it is of crucial importance to identify factors that are conducive or restrictive to performance information use. In response to calls for more studies examining the individual differences between managers that affect data use, the present article investigates human service managers' role identities and their influence on the utilization of performance information. Unlike most previous research, which focused only on the direct effects of various independent variables on performance information use, we also take into account mediation effects and thereby provide a better understanding of the mechanisms by which managers and contextual factors shape the application of performance information.

Our key findings confirm the important and, - to date - understudied role of executives' identities for a purposeful use of performance information. It is, however, important to stress that a comparison of the direct and indirect effects of the two identity types under consideration reveals that a managerial role identity exerts a stronger and more straightforward effect on performance information use than a professional self-conception. As expected, leading professionals who predominantly experience their role as that of a manager undergo significantly less role conflict when measuring the performance of their organization. This is because the requirements associated with performance measurement are highly compatible with the values and beliefs that make up their self-concept.

Independently from that, i.e. even when controlling for the level of role conflict, a managerial identity is positively and significantly associated with performance information use. This implies that a managerial identity is a crucial individual disposition that fosters data usage in various ways. In the public and nonprofit sectors, the introduction of management tools that draw heavily on performance indicators promotes a fundamental new work role for executives (Meyer & Hammerschmid, 2006). As regards the actual use of such tools, we demonstrate that executives must identify with the emerging role of an active manager that

initiates change, leads people through transition, and ensures control that staff is pursuing organizational goals in an efficient way.

But what if executives see themselves mainly as professionals? Human service managers who strongly identify themselves with a professional role concept experience greater role conflict with performance measurement, indicating that they face some difficulties in aligning the underlying principles with their professional beliefs. Nevertheless, the values and principles associated with a professional self-concept have displayed a rather weak link to the occurrence of role conflict and it is exclusively through this relationship that the professional identity type has a negative effect on performance information use. Unlike in the case of a managerial identity, no direct relationship between a professional identity and data usage has been observed. The bivariate correlation in table 1 even reveals a positive, though not significant, association. In sum, our results indicate that a professional self-definition hampers performance information use to a much lesser extent than it is fostered by a managerial identity. This finding also indicates that – despite the observed difficulties in reconciling competing demands – executives with a salient professional identity do not perceive performance measurement as a serious threat to professional standards and autonomy, nor inevitably refuse the utilization of performance information. Therefore, we found no evidence for the popular notion of a fundamental antagonism between professional ideals and new management tools (Flynn, 1999; van der Veen, 2013), at least not at the management level examined.

A likely explanation for our result is that, as suggested by Exworthy and Halford (1999), some professionals strategically embrace management techniques when climbing the career ladder. In less professionalized fields of social work and social care in particular, senior professionals may, despite some initial concerns also view those techniques as an opportunity to advance their professional development and to strengthen their management role (Kirkpatrick et al., 2005).

In addition to providing these insights concerning the role of identities for data usage, our study also contributes to a growing body of literature examining civil servants' identities in the context of managerial reform programs. Our analysis reveals that managers in comparable organizations and positions can perceive their role differently, which, in turn, also shapes managerial attitudes and style of decision-making. This builds on prior research showing that the restructuring of public administration results in multiple identities (Bourgault & Van Dorpe, 2013; Meyer et al., 2014; Rondeaux, 2006) that influence public servants' responses to NPM-inspired reforms (Berg, 2006).

Our findings further coincide with results from studies indicating a persistence of professional orientations alongside new managerial self-concepts (Bourgault & Van Dorpe, 2013; de Graaf, 2011). In this regard, it is worth noting that our analysis shows that the identity types under consideration are two distinct role perceptions, which are similarly strongly pronounced within human service organizations today and, interestingly, positively related to each other (see table 1 and footnote 2). The results thus show that executives with a professional background can adapt to and identify with managerial role concepts while retaining elements of their professional disposition. As a consequence, executives may simultaneously have multiple identities that vary in intensity or salience. The pattern of identity change thus needs to be thought of more as a complement to than a substitute for the traditional orientation. What this suggests for future research is that scholars should take into consideration that executives in similar job positions may interpret their role differently and exhibit multiple identities simultaneously. These further analyses could usefully be complemented by additional efforts to operationalize and measure more identity types with greater accuracy. It would then be interesting to look more thoroughly at the relationships between these varying self-definitions and their influence on managers' responses to different external demands.

The findings from the present study further indicate that managerial attitudes and behaviors cannot be adequately understood when they are viewed in isolation from contextual influences. We demonstrate that resource inadequacy, strong political control, and poor information quality precipitate the perception of role conflict and decrease the likelihood of a purposeful use of performance information. These factors turned out to be more important in explaining managers' difficulties when it comes to performance measurement than a professional identity. This insight is important because many public service organizations operate under conditions of scarce resources, stringent political control, limited autonomy and lack of information (Hupe & van der Krogt, 2013; Moynihan, 2006; Nutt, 2006). We thus recommend that scholars consider these constraints in subsequent studies and examine their interplay with the attitudes and behaviors of executives who have to implement managerial reform programs. This can provide important insights into the challenges for those who try to balance the competing requirements in the public and nonprofit sector. It should also be mentioned here that our analyses revealed no significant differences between public and nonprofit managers with regards to the experience of role conflict and their reliance on performance information.⁴

Some limitations of this study must be borne in mind when interpreting the results. First, measuring all constructs on the basis of just one survey always raises concerns with respect to common source bias (CSB). Nevertheless, George & Pandey (2017) note that the risk of CSB is exaggerated for studies that do not use perceptual measures of organizational performance. These scholars show that when procedural remedies are taken to reduce the potential for CSB, measuring both the independent and dependent variables by a single data source does not necessarily and routinely result in spurious results. In the present study, we focus on a dependent variable which is less prone to CSB than a self-reported measure of performance (cf. Meier & O'Toole, 2010), and we placed the survey items for our main constructs in separate parts of the questionnaire in order to minimize the susceptibility for

CSB. Further, we found no indication of inflated correlations. A glance at table 1 shows that only 18 of the 28 reported correlations (dichotomous control variables and job tenure excluded) proved to be statistically significant, indicating that almost 36% of the correlations were not significant. Moreover, the relatively low correlations between the study measures and additional tests for the discriminant validity of the latent construct do not indicate that CSB is a major threat to the validity of our analysis. It should also be noted here that no other data source was available for our study and, importantly, that our measures pertain to values, beliefs and perceptions of managers, which are very difficult to measure in ways other than those used in this study.

A second limitation of the study is that the results are based on self-reported data. It is therefore possible that respondents overestimate the level of performance information use. Experimental research designs that allow the observation of actual behavior in real-life situations might be an interesting approach for future research to strive for more objective data (cf. Kroll, 2015a). Third, one should also bear in mind that the present study was carried out in specialized human service organizations in Switzerland. Although the study's generalizability was increased by considering executives with different occupational backgrounds and by including organizations from various service domains in the public and nonprofit sector, one should be cautious in extrapolating the results to other domains and countries.

Conclusion

Our research sought to find out whether human service managers' role identities matter when it comes to performance measurement, and our key finding is clear: Role identities affect both the experience of role conflict with performance measurement and the utilization of performance information. A lack of resources, high levels of political control, and poor information quality are also found to be associated with role conflict and a limited use of

performance information. Based on this, we can draw the following conclusions for managerial reform programs more generally.

First, there is evidence to suggest that managerial reform objectives are more likely to be achieved when executives embrace businesslike values and identify themselves with managerial principles. A practical implication of this is that promoters of performance-based management should, in addition to the technical aspects, also focus on the people responsible for implementation and pursue an influence strategy in order to increase the willingness of those individuals to take on a management role and endorse a managerial orientation. This can be especially important in human service fields, where executives often have a professional background and not necessarily a well-founded management education.

Proactive attempts to influence beliefs, attitudes, and identities within organizations subject to performance interventions can be guided by the approaches discussed in the change management literature (e.g. Armenakis, Harris, & Mossholder, 1993). For example, a strategy to develop supportive values and cultures can start with a persuasive change message that emphasizes the importance and benefits of (performance) management for leading professionals and the wider organization, fosters people's confidence in their capability to be a good manager, and provides support for the relevant training. Further training investments directed toward the implementation of management reforms can also help to disseminate information about how performance management works, clarify expectations, and improve managers' understanding of how to utilize their discretion to use performance information (Kroll & Moynihan, 2015). As well as communication and education, influence strategies can also make attempts to guarantee certain forms of participation and discretion that allow the inclusion of discrepant views, negotiation, and experimentation with the new requirements (Kotter & Schlesinger, 1997).

Second, the present study illustrates that certain tensions and conflicts may be inherent to the role of managerial professionals dealing with performance measurement. It has become

apparent, however, that this is not simply a matter of identity. Instead, our findings strongly indicate that contextual factors play a significant part in managers' struggle in aligning new role demands with traditional orientations. A practical lesson from this study is that the provision of adequate resources and operational flexibility can help to dismiss doubts concerning incompatibility between a managerial logic and professional standards. Therefore, the setting of stringent requirements concerning the use of management instruments without providing the addressees with the requisite resources and autonomy to meet these demands should be avoided.

In conclusion, this article provides important insights into the opportunities and difficulties managerial professionals may face when implementing performance measurement. We hope that this analysis might encourage further research on the mechanisms through which both individual dispositions and context factors contribute to the success of contemporary and future reform initiatives.

Notes

¹ To test for non-response bias in our data, we compared the characteristics of respondents in the sample with the population parameters obtained from an administrative data set collected by the Swiss Federal Statistical Office (BFS, 2015). The three variables of age, gender, and job tenure were available for both the respondents and non-respondents (though not for the work integration domain, which is why managers in this field were not considered in the non-response analysis). In our sample, 70 percent of the respondents were male, and 30 percent were female. This ratio is comparable to that in the general population (67% men and 33% women). The respondents' average age was 54 years, which is only marginally higher than the national average (53 years). The respondents median job tenure fell between 7-9 years, which is identical with the population parameter. In sum, the comparison revealed no

substantial differences between the respondents in our sample and the population, which makes us confident that our further analyses are not distorted by any non-response bias.

² Before the hypothesized measurement model was tested, we conducted an explanatory factor analysis (EFA) in order to test whether managerial role identity and professional role identity are indeed two distinct constructs. We performed an oblique promax rotation because it seems plausible that the factors are correlated. The analysis showed two factors that correspond to PRI (eigenvalue = 2.28, all item loadings above 0.59 and communalities above 0.40) and MRI (eigenvalue = 1.29, all item loadings above 0.61 and communalities above 0.41). Overall, each item strongly loads on its expected construct and shows weak cross-loadings (the latter are between -.02 and .07). EFA thus demonstrates that the items used measure two distinct concepts.

³ In order to have an adequately large group size, we combined the facilities for the disabled and children and youth institutions in one group. Work integration institutions and facilities for drug addicts were also grouped together. We think that this approach is justified here because facilities for the disabled often provide services for minors, and substance abuse services sometimes include job placement services.

⁴ In contrast, some differences were found with regard to performance information use across service domains. Additional F-tests confirmed that the level of performance information use is significantly higher in nursing homes (mean = 27.7) and significantly lower in children and youth institutions (mean = 23.1) than in all other service domains. In the remaining domains, managers' reliance on performance information (mean = 25.3 to 26.4) does not significantly vary.

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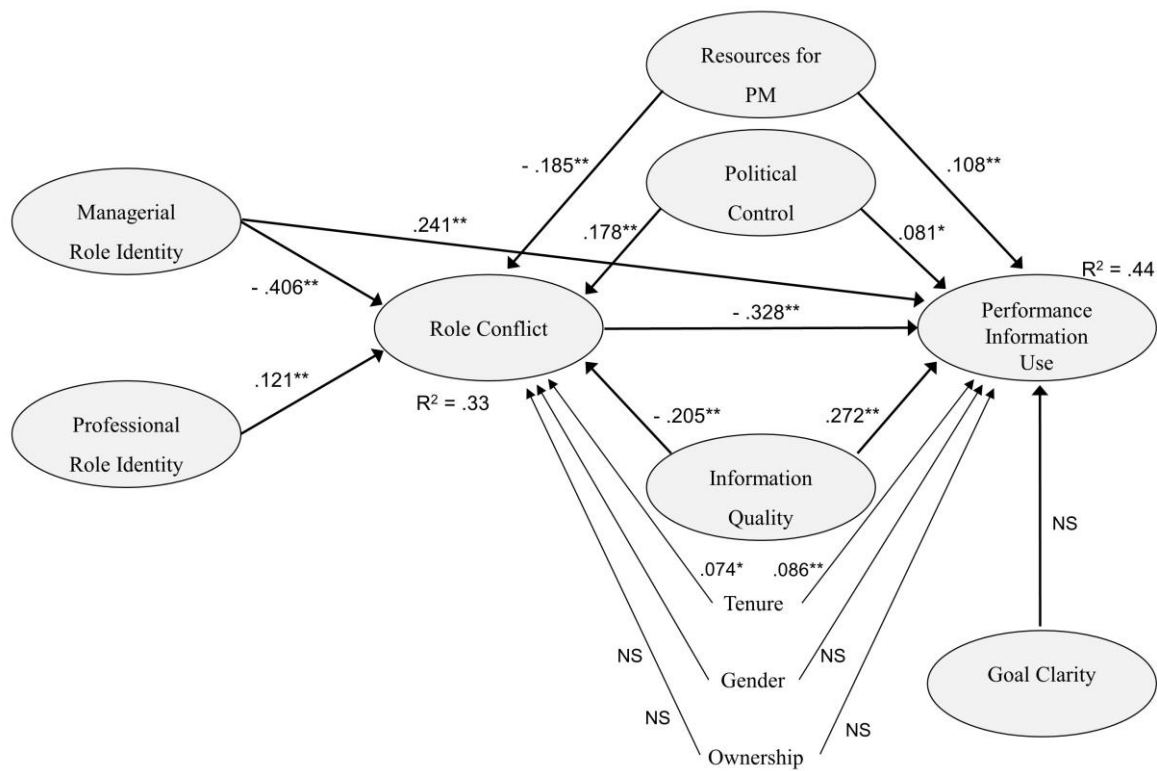
Table 1: Descriptive Statistics, Bivariate Correlations, and Reliabilities

	Descriptive Statistics			Correlations and Reliabilities									
	Mean	S.D.	Range	1	2	3	4	5	6	7	8	9	10
Study variables													
1 Performance information use	26.60	6.37	5-35	(.92)									
2 Managerial role identity	20.12	3.92	4-28	.35**	(.80)								
3 Professional role identity	20.88	3.99	4-28	.15	.17**	(.79)							
4 Role conflict	14.53	4.79	4-28	-.40**	-.20**	.04	(.82)						
5 Resources for measurement	13.16	4.20	3-21	.28**	.02	-.03	-.33**	(.84)					
6 Political control	14.11	4.23	3-21	.04	.06	.03	.17**	-.15**	(.74)				
Control variables													
7 Goal clarity	18.23	2.78	3-21	.12**	.14**	.10**	-.05	.15**	-.01	(.74)			
8 Information quality	27.35	4.87	5-35	.43**	.09*	.09*	-.30**	.35**	.03	.24**	(.92)		
9 Facility ownership (public)	0.24	0.43	0-1	-.05	.01	.01	.00	.02	-.01	-.09*	.02	NA	
10 Sex (male)	0.70	0.46	0-1	.02	-.02	-.12**	.02	-.01	.12**	.01	.00	-.05	NA
11 Tenure	3.67	1.33	1-5	.11**	.02	.11**	.08*	.08*	.12**	.17**	.13**	-.04**	.13

Notes: N= 742; S.D. = standard deviation; standardized Cronbach's alpha in parentheses.

*p < .05, **p < .01

Figure 1: Path Coefficients for the Final Structural Model



$X^2 = 904$; $df = 482$; $RMSEA = .034$; $SRMR = .048$; $CFI = .958$; $TLI = .952$

* $p < .05$; ** $p < .01$. Standardized coefficients are reported.

Appendix 1: Study Measures

Performance information use (Cronbach's alpha = .92)^a

- I regularly use performance information to make decisions.
- I use performance information to adopt new solutions for old problems.
- I use performance information to set priorities.
- I use performance information to identify problems that need attention.
- I use performance information to track goal achievement.

Role conflict (Cronbach's alpha = .82)^a

- Looking from my professional values and norms, I embrace performance measurement. (R)
- Performance measurement negatively affects my professional autonomy.
- In working with performance measurement, I violate my professional ethics.
- Working with performance measurement conflicts with my values and norms as a professional.

Professional role identity (Cronbach's alpha = .79)^a

- I systematically and regularly read professional journals, websites, etc. for professionals in [*specific area of human services*].^b
- I regularly attend professional meetings organized for professionals in [*specific area of human services*].^b
- I am aware of the existence of a code of conduct for human service professions.
- I believe that professionalism and loyalty to professional rules are the leading values in my work.

Managerial role identity (Cronbach's alpha = .80)^a

- My primary role is setting goals and leading people through changes to achieve these goals.
- Efficiency, effectiveness and economy are the key objectives for people in my position.
- In my job, it is important to ensure control that staff is pursuing the organization's goals in a correct and efficient way.
- It is my job to innovate and ensure change.

Resources for performance measurement (Cronbach's alpha = .84)^a

- We lack time and money for the measurement of performance and quality. (R)
- We lack assigned staff who are knowledgeable about gathering and analyzing performance information. (R)
- Our organization has an efficient information system for measuring and analyzing performance and quality.

Political control (Cronbach's alpha = .74)^a

- The law and regulations relating to [*specific area of human services*] are too detailed.^b
- The executive board does not have enough autonomy and independence from politics to manage the organization in an effective way.
- [*Specific type of human service organizations*] are overregulated and too much controlled by the state.^c

Information quality (Cronbach's alpha = .92)^d

How do you assess the quality of the performance information in your organization as regards the following dimensions?

- Tangibility

- Steering relevance
- Reliability
- Timeliness
- Overall quality

Goal clarity (Cronbach's alpha = .74)^a

- This organization's mission is clear to almost everyone who works here.
- It is easy to explain the goals of this organization to outsiders.
- This organization has clearly defined goals.

Ownership (public)

What is the legal form of your facility? (coded as 1= public, 0 = nonprofit)

Gender (male)

Are you male or female? (coded as 1= male, 0 = female)

Job tenure

How many years have you been in your current position? (coded as 1= less than 1 year, 2 = 1-3 years, 3 = 4-6 years, 4 = 7-9 years, 5 = 10 and more years)

Note: (R) Reverse worded.

- Items were measured on a seven-point Likert scale ranging from 1 (= strongly disagree) to 7 (strongly agree).
- Areas of human services were: the long-term care sector, the special needs sector, the work integration sector, the addiction treatment sector, the child and youth sector

- c. Types of human service organizations were: nursing homes, facilities for the disabled, work integration institutions, children and youth institutions, facilities for drug addicts
- d. Items were measured on a seven-point Likert scale ranging from 1 (= very poor) to 7 (excellent).

Appendix 2: Properties of the Measurement Model

Constructs and Indicators	Loadings ^a	Z-value	Error Variance ^b	IR ^c	CR ^d	AVE ^e
Performance information use					.912	.675
PIU1	.914		.165	.835		
PIU2	.866	36.446	.250	.750		
PIU3	.837	33.568	.299	.701		
PIU4	.742	25.464	.449	.551		
PIU5	.734	19.413	.461	.539		
Professional role identity					.782	.483
PRI1	.915		.163	.837		
PRI2	.565	14.714	.680	.320		
PRI3	.651	17.614	.577	.423		
PRI4	.593	15.574	.649	.551		
Managerial role identity					.795	.502
MRI1	.923		.148	.852		
MRI2	.659	16.038	.565	.435		
MRI3	.594	14.635	.647	.353		
MRI4	.605	13.185	.633	.367		
Role conflict					.811	.520
RCON1	.664		.559	.441		
RCON2	.689	24.107	.525	.475		
RCON3	.685	11.834	.531	.469		
RCON4	.833	12.207	.306	.694		
Resources for performance measurement					.854	.665
RESRC1	.882		.222	.778		
RESRC2	.875	24.424	.234	.766		
RESRC3	.672	18.500	.549	.451		
Political control					.756	.513
PCNTR1	.859		.262	.738		
PCNTR2	.641	13.215	.589	.411		
PCNTR3	.625	12.460	.609	.391		

Appendix 2: Properties of the Measurement Model (continued)

Information quality					.918	.691
QUALITY1	.902		.186	.814		
QUALITY2	.836	31.495	.301	.699		
QUALITY3	.843	30.617	.289	.711		
QUALITY4	.781	27.107	.390	.610		
QUALITY5	.789	26.824	.377	.623		
Goal clarity					.744	.495
CLRTY1	.794		.370	.630		
CLRTY2	.654	12.374	.572	.428		
CLRTY3	.653	12.854	.573	.427		

^a Loadings are standardized ($p < 0.01$ for all).

^b calculated as 1 minus the indicator reliability

^c Indicator reliability (IR) indicates the percent of variation in each indicator that is accounted for by the factor to which it was assigned, calculated as the square of the standardized factor loading. Values greater than 0.39 are considered ideal.

^d Composite reliability (CR) is analogous to Cronbach's coefficient alpha, and reflects the internal consistency of indicators measuring a given factor. Values should generally be greater than 0.69.

^e Average variance extracted estimates (AVE) are calculated to assess the amount of variance captured by factors in relation to variance attributable to measurement error. Constructs should have variance extracted estimates greater 0.49.

Appendix 3: Model Fit Statistics from Confirmatory Factor Analyses for Multi-group Invariance Testing

Model	Restriction	χ^2 (df)	χ^2 /df	RMSEA	SRMR	TLI	CFI	Δ CFI	$\Delta\chi^2$	Δ df	Decision
0 Hypothesized measurement model	-	760 (398)	1.91	.035	.048	.957	.963				accepted
Measurement invariance (MI) across service domains											
1 Configural MI	-	1690 (1194)	1.42	.041	.061	.942	.951				accepted
2 Metric (weak) MI	Factor loadings	1741 (1240)	1.40	.040	.063	.944	.950	.001	51	46	accepted
3a Scalar (strong) MI	Factor loadings, intercepts	1861 (1286)	1.45	.043	.065	.938	.943	.007	120**	46	rejected
3b Partial MI ^c	Factor loadings, intercepts	1776 (1270)	1.40	.040	.064	.945	.950	.000	29	30	accepted
4 Factor variance invariance	Factor loadings, intercepts, factor variances	1801 (1286)	1.40	.040	.074	.944	.949	.001	16	25	accepted
5 Factor covariance invariance	Factor loadings, intercepts, factor variances, factor covariances	1877 (1342)	1.40	.040	.080	.945	.947	.002	76	56	accepted
Measurement invariance (MI) across sectors											
6 Configural MI	-	1143 (796)	1.44	.034	.054	.958	.964				accepted
7 Metric (weak) MI	Factor loadings	1169 (819)	1.43	.034	.053	.959	.964	.000	26	23	accepted
8 Scalar (strong) MI	Factor loadings, intercepts	1201 (842)	1.43	.034	.054	.959	.963	.001	32	23	accepted
9 Factor variance invariance	Factor loadings, intercepts, factor variances	1204 (850)	1.42	.033	.056	.960	.964	.001	3	8	accepted
10 Factor covariance invariance	Factor loadings, intercepts, factor variances, factor covariances	1240 (878)	1.41	.033	.060	.961	.963	.001	36	28	accepted

Notes: $N = 742$, ** $p < 0.01$, * $p < 0.05$; MI= measurement invariance; χ^2 = chi-square discrepancy; df = degrees of freedom; χ^2/df = chi-square to degrees of freedom ratio; RMSEA = root mean square error of approximation; SRMR = root mean squared residual; CFI = comparative fit index; TLI = Tucker Lewis index; $\Delta\chi^2$ = difference in chi-square; Δdf = difference in degrees of freedom; c in the partial MI model, seven parameters are allowed to vary across groups.